CHCS

Center for
Health Care Strategies, Inc.

FACES OF MEDICAID
DATA SERIES

Multimorbidity Pattern Analyses and Clinical Opportunities: *Depressive Disorders*

December 2010

Cynthia Boyd, MD, MPH*
Bruce Leff, MD*
Carlos Weiss, MD, MHS*
Jennifer Wolff, PhD*
Rebecca Clark
Thomas Richards, MS

The Johns Hopkins University
**Co-Principal Investigators.*

This set of tables is part of the analysis, *Clarifying Multimorbidity to Improve Targeting and Delivery of Clinical Services for Medicaid Populations*, which was undertaken by the Center for Health Care Strategies and The Johns Hopkins University School of Medicine and Bloomberg School of Public Health to help policymakers identify intervention strategies with the potential to both improve quality and reduce costs for Medicaid beneficiaries with multiple chronic conditions. For the full report, visit **www.chcs.org**.

Made possible through support from Kaiser Permanente.

Contents

*The **Center for Health Care Strategies** (CHCS) is a nonprofit health policy resource center dedicated to improving health care quality for low-income children and adults, people with chronic illnesses and disabilities, frail elders, and racially and ethnically diverse populations experiencing disparities in care. CHCS works with state and federal agencies, health plans, providers and consumer groups to develop innovative programs that better serve Medicaid beneficiaries with complex and high-cost health care needs. Its program priorities are: enhancing access to coverage and services; improving quality and reducing racial and ethnic disparities; integrating care for people with complex and special needs; and building Medicaid leadership and capacity.*

Overview

This set of tables is part of the *Faces of Medicaid* analysis, *Clarifying Multimorbidity to Improve Targeting and Delivery of Clinical Services for Medicaid Populations*, undertaken by the Center for Health Care Strategies (CHCS) and The Johns Hopkins University School of Medicine and Bloomberg School of Public Health. The analysis sought to help policymakers identify intervention strategies with the potential to both improve quality and reduce costs for adult Medicaid beneficiaries with multiple chronic conditions.

The following tables summarize multimorbidity data on depressive disorders for adult Medicaid-only beneficiaries with disabilities under the age of 65, and inventory potential clinical opportunities for addressing multimorbidity associated with depressive disorders. For this analysis, "multimorbidity patterns" are defined as the specific and often multiple conditions that a person has (e.g., a person with depression, hypertension, chronic pain, and asthma), as opposed to a simple tally of the number of conditions that someone has (e.g., a person with five chronic conditions). The tables are intended to aid policymakers in identifying subgroups of Medicaid beneficiaries who stand to benefit from targeted care management and tailoring intervention strategies to improve health outcomes and reduce costs. Specific contents include:

1. ***Multimorbidity Summary Table* (Table 1)**: This table lists the five most costly patterns of multimorbidity (based on total annual costs, excluding long-term care expenditures) for depressive disorders. These data can be used to help prioritize care management opportunities to improve outcomes and control costs. Prevalence, costs, and hospitalization rates are summarized for:

    - Beneficiaries who *only* have the specific depressive disorders pattern, without additional comorbidities.
    - Beneficiaries who have the specific depressive disorders pattern *plus* potentially other comorbidities. In other words, all individuals represented in this group have the conditions specified in the stated multimorbidity pattern, but any individual may have other conditions as well. This broader approach has a greater likelihood of capturing all individuals with depressive disorders and the identified comorbidities in the population.

2. ***Multimorbidity Pattern Table* (Table 2)**: This table details the 16 most prevalent multimorbidity patterns for depressive disorders, including prevalence, cost, and hospitalization data for each. Data include beneficiaries who *only* have the specific conditions in each multimorbidity pattern.

3. ***Clinical Opportunities Table* (Table 3)**: A series of literature searches was conducted for the multimorbidity patterns that the analysis identified as high-priority opportunities from a prevalence, clinical, and cost perspective. In addition to presenting actionable, clinical opportunities for Medicaid stakeholders responsible for care management program design, this clinical opportunities table also helps identify gaps in knowledge around clinical management of these conditions. Literature is categorized as follows:

    - Clinical "pearls" that offer recommendations relevant to an aspect of care for individuals with the specified multimorbidity pattern;
    - Single disease-specific models that address processes important to caring for individuals with multimorbidity, such as care coordination and medication management;
    - Relevant clinical practice guidelines and systematic reviews; and
    - Evidence-based models for the specific multimorbidity pattern.

Table 1: Depressive Disorders Multimorbidity Summary

This table lists the five most costly patterns of multimorbidity -- based on total annual costs, excluding long-term care expenditures -- for depressive disorders. These data can be used to help prioritize care management opportunities to improve outcomes and control costs.

Medicaid-Only Adult Beneficiaries with Disabilities, Under Age 65

	Multimorbidity Pattern	Prevalence among beneficiaries with depressive disorders	Prevalence among overall population	Per capita cost	Percent of total annual costs among beneficiaries with depressive disorders	Percent of total annual costs among overall population	Per capita hospitalizations
	Depressive Disorders						
1	+ Antipsychotic or Mood Stabilizer Drugs	4.68%	1.86%	$10,968	3.57%	1.92%	0.06
		49.91%	19.80%	$18,293	63.56%	34.20%	0.75
2	Depressive Disorders only (no comorbidities among conditions considered)	5.85%	2.32%	$5,793	2.36%	1.27%	0.06
		100.00%	39.68%	$14,365	100.00%	53.81%	0.60
3	+ Antipsychotic or Mood Stabilizer Drugs, Anxiety Disorder or Benzodiazepam Use	2.53%	1.00%	$12,101	2.13%	1.15%	0.11
		26.35%	10.46%	$20,416	37.45%	20.16%	1.00
4	+ Antipsychotic or Mood Stabilizer Drugs, Developmental Disorders	0.62%	0.25%	$33,421	1.44%	0.77%	0.13
		3.14%	1.25%	$36,819	8.05%	4.33%	0.79
5	+ Antipsychotic or Mood Stabilizer Drugs, Anxiety Disorder or Benzodiazepam Use, Developmental Disorders	0.49%	0.20%	$41,703	1.43%	0.77%	0.23
		1.64%	0.65%	$40,093	4.59%	2.47%	1.11

Co-occurring conditions that were considered include: Depressive disorders, hypertension, coronary heart disease, asthma and/or chronic obstructive pulmonary disease, back or spine disorders, antipsychotic or mood stabilizer drugs, drug and alcohol disorders, diabetes, anxiety disorder or benzodiazepam use, congestive heart failure, hepatitis or chronic liver disease, stroke, prednisone use, dizziness, gastrointestinal bleed, anticoagulation drugs (warfarin), chronic renal failure/end stage renal disease, HIV or AIDS, and personality disorders.

KEY

- ☐ Beneficiaries with only depressive disorders and the specified multimorbidity pattern (no other comorbidities).
- ▭ Beneficiaries with depressive disorders, the specified multimorbidity pattern, and potentially other additional comorbidities, varying by individual.

Table 2: Depressive Disorders Multimorbidity Patterns

This table presents the 16 most prevalent co-occurring conditions for depressive disorders (columns in the left half), and prevalence, hospitalization, and cost data for each pattern (columns in the right half). These data reveal patterns that are prime for targeted interventions across a number of variables of interest, including: population prevalence, per capita costs, and annual hospitalization rate. For each pattern, these variables are calculated for individuals who have the specified conditions and no other comorbidities. The condition columns are ordered from most prevalent (left) to least prevalent (right) in the depressive disorders population. A checkmark represents the presence of the specified condition. Unless noted, all cost estimates exclude long-term care costs.

Medicaid-Only Adult Beneficiaries with Disabilities, Under Age 65

	Depressive Disorders +																						
	Antipsychotic or mood stabilizer drugs	Anxiety disorder or benzodiazepam use	Hypertension	Coronary heart disease	Asthma and/or chronic obstructive pulmonary disease	Drug and alcohol disorders	Back or spine disorders	Chronic pain	Diabetes	Schizophrenia	Dizziness	Hepatitis or chronic liver disease	Stroke	Prednisone use	Personality disorders	Developmental disorders	Pattern Prevalence, %[1]	Cumulative Prevalence, %	Annual Hospitalization Rate Per Capita	Per Capita Costs, excl. Long-term Care	% Total Annual Costs, excl. Long-term Care	Cumulative % of Total Annual Costs, excl. Long-term Care[2]	% Total Annual Long-term Care Costs	Very High-Cost Prevalence, %[3]	High-Cost Prevalence, %[4]
1																	5.85%	5.85%	0.06	$5,793	2.36%	2.36%	3.27%	0.64%	4.97%
2	✓																4.68%	10.53%	0.06	$10,968	3.57%	5.93%	3.86%	0.94%	12.41%
3		✓															2.60%	13.12%	0.07	$5,952	1.08%	7.01%	1.16%	0.66%	5.28%
4	✓	✓															2.53%	15.65%	0.11	$12,101	2.13%	9.14%	2.54%	1.52%	17.61%
5	✓									✓							1.40%	17.06%	0.23	$13,080	1.28%	10.42%	1.05%	3.36%	23.96%
6			✓														1.22%	18.28%	0.10	$5,411	0.46%	10.88%	0.49%	0.68%	5.15%
7							✓										1.13%	19.41%	0.07	$4,426	0.35%	11.23%	0.24%	0.38%	4.12%
8	✓	✓								✓							0.80%	20.21%	0.42	$15,700	0.87%	12.10%	0.83%	6.14%	32.91%
9								✓									0.72%	20.93%	0.21	$8,661	0.43%	12.53%	0.45%	2.71%	13.25%
10		✓					✓										0.71%	21.64%	0.08	$4,961	0.25%	12.78%	0.12%	0.26%	4.60%
11			✓						✓								0.67%	22.31%	0.19	$7,757	0.36%	13.14%	0.34%	1.41%	11.14%
12									✓								0.65%	22.96%	0.12	$6,986	0.32%	13.45%	0.41%	1.22%	8.47%
13	✓						✓										0.65%	23.61%	0.08	$8,474	0.38%	13.84%	0.17%	0.70%	11.65%
14					✓												0.65%	24.25%	0.15	$6,289	0.28%	14.12%	0.23%	1.26%	7.22%
15		✓	✓														0.65%	24.90%	0.10	$5,496	0.25%	14.37%	0.21%	0.77%	5.21%
16				✓													0.63%	25.53%	0.16	$6,291	0.28%	14.64%	0.28%	1.39%	6.53%

KEY

- Index condition with no comorbidity in identified conditions.
- Patterns with the top three highest total annual costs.
- Patterns with the top three highest annual hospitalization rates.
- Patterns with the top three high-cost prevalence rates.

[1] Prevalence of this pattern among beneficiaries with depressive disorders.

[2] $10.7 billion, excluding Long-Term Care costs, was spent by Medicaid on 745,680 disabled Medicaid-only beneficiaries with depressive disorders. Results are presented for the top 16 out of 16,067 total patterns observed for people with depressive disorders.

[3] The proportion of beneficiaries with this specific multimorbidity pattern who are represented among beneficiaries in the top 1st to 5th percentile of costs in the overall population of Medicaid-only adult beneficiaries with disabilities.

[4] The proportion of beneficiaries with this specific multimorbidity pattern who are represented among beneficiaries in the top 5.01st to 20th percentile of costs in the overall population of Medicaid-only adult beneficiaries with disabilities.

Table 3: Depressive Disorders Clinical Opportunities

The following table inventories evidence-based models of care for depressive disorders and associated multimorbid patterns, including references published since 2000. This resource provides an actionable complement to the multimorbidity cost and prevalence data presented earlier. It is intended to guide Medicaid stakeholders in tailoring implementation strategies to improve care for beneficiaries with these multimorbidity patterns.

A bibliography of full citations alphabetized by author is available at **www.chcs.org**.

Clinical pearl for specific multimorbidity pattern	Single-disease focused clinical care delivery model for multimorbid patients	Clinical practice guidelines or systematic review for multimorbidity pattern	Model for specific multimorbidity pattern
Depression + Antipsychotic or Mood Stabilizer			
Chaput 2008. Use of lithium or atypical antipsychotics may identify refractory depression.	Gensichen 2009. Randomized trial of case management for depression by health care assistant in small primary care practices. Demonstrated reduction in depression symptoms.		Kilbourne 2009. Bauer 2006. Collaborative care model effective for people with bipolar and comorbid conditions.
	Bao 2009. Evidence-based depression care management in primary care in older patients. Demonstrated increased utilization of antidepressants, adequate doses and duration of therapy.		Kilbourne 2008. Bipolar medical care mode may have slowed decline in physical health-related quality of life.
	Unutzer 2003. Describes first report from IMPACT trial of collaborative care management for late-life depression. Multiple studies demonstrated positive effects on depression outcomes as well as outcomes related to other comorbid conditions.		Fortney 2007. Telemedicine-based collaborative care improved HRQOL and depression, much psychiatric and medical comorbidity.
	Bauer 2009. Collaborative models improve antimanic treatment.		
	Weiss 2009. Integrated group therapy helps bipolar and substance abuse.		
	Capoccia 2004. Pharmacist interventions can improve adherence and outcomes.		
	Rost 2002. Ongoing treatment of depression in primary care improved emotional and physical functioning.		
Depression + Anxiety Disorder or Benzodiazepine Use			
Andreescu 2007. Comorbid anxiety may increase relapse risk in late-life depression.	Rost 2002. See above.		Leichsenring 2009. Short-term psychodynamic psychotherapy and CBT helps anxiety and depression.
Lenze 2003. Suggests good outcomes possible for anxious depression in elderly.			

Clinical pearl for specific multimorbidity pattern	Single-disease focused clinical care delivery model for multimorbid patients	Clinical practice guidelines or systematic review for multimorbidity pattern	Model for specific multimorbidity pattern
Depression + Anxiety Disorder or Benzodiazepine Use *(continued)*			
Friedman 2005. Five item index valid for depressed older people.	Katzelnick 2000. Depression management program improved depression and general health within primary care, among high utilizers.		Van Straten 2006. Stepped care is as effective as matched care.
Sheehan 2009. Risperidone not effective anxiolytic for bipolar patients.	Gensichen 2009. Randomized trial of case management for depression by health care assistant in small primary care practices. Demonstrated reduction in depression symptoms.		Bartels 2004. Collaborative mental health treatment more likely to engage older adults with depression, anxiety, or alcohol use.
	Bao 2009. Evidence-based depression care management in primary care in older patients. Demonstrated increased use of antidepressants, adequate doses, and duration of therapy.		Veazey 2009. Telephone administered CBT is feasible and may improve anxiety and depression in Parkinson's patients.
	Unutzer 2003. See above.		Tohen 2007. Comorbid anxiety affects treatment response in bipolar depression. Olanzapine and fluoexetine MAY help. May have more side effects. Subgroup analysis and pharma sponsored.
	Capoccia 2004. See above.		
			Lang 2006. Brief mental health intervention in primary care improves anxiety and depression.
			Gum 2007. Case management and CBT may be beneficial to low-income older adults with depression and anxiety or personality disorders. Small study.
Depression + Dementia			
Powell 2008. Systematic review of technology supporting care of people with dementia.			Forbes 2008. Systematic review of physical activity programs for people with dementia, including depression outcomes.
			Bains 2002. Systematic review of antidepressants in people with dementia.
Hansen 2006. Systematic review of massage touch for behaviors, including anxiety, in people with dementia.			Gellis 2009. Narrative review of treatment of depression in people with dementia in long-term care.
Brown 2009. How to detect depression in people with dementia.			